

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT:

- (A) NAME: INSTITUT PASTEUR
- (B) STREET: 28 RUE DU DOCTEUR ROUX
- (C) CITY: PARIS CEDEX 15
- (E) COUNTRY: FRANCE
- (F) POSTAL CODE (ZIP): 75724

(ii) TITLE OF INVENTION: A METHOD FOR ISOLATING A POLYNUCLEOTIDE OF INTEREST FROM THE GENOME OF A MYCOBACTERIUM USING A BAC-BASED DNA LIBRARY. APPLICATION TO THE DETECTION OF MYCOBACTERIA.

(iii) NUMBER OF SEQUENCES: 5

(iv) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: Floppy disk
- (B) COMPUTER: IBM PC compatible
- (C) OPERATING SYSTEM: PC-DOS/MS-DOS
- (D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)

(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12732 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

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|---|-----|
| ACCTGCGCTT GCAGAGATCA AATAGGGCGC ATGGGTCAGC ATAGTACAGG TCGTCGCGCA | 60 |
| TCTTTGATGC ATCGGAATAA GATGTCAGGC AATTAAAAGA GAAGCCACGG CGACTCGCGG | 120 |
| CATTCAGCAT GTCGAGCGTC GCTTCGATGT GAGCGCACCA TTCCGTGTCC AACGATTTCA | 180 |
| GACGAACATT GAATATTCCA CTCGCGACGC TATAGTCCGC CTCCCAGTCT ATGCGCGCCC | 240 |
| CGCAGATGAA GTCTGCGTTC GCCCGACCTT CGAAACGTAG TCGGGCCGCG CGCACCATTT | 300 |
| CGGGGGAGAC GTCGATGCCG GTGTAATCAG TTTTGAAGCC ACGCGCATCT AGGTAGTCCA | 360 |
| GTAGAGCCCC ATAGCCACAG CCTAGATCGT TGATCGAAAA TGGGTCCGCC GCATTGACAA | 420 |
| TGCGCACCAG CTGGTCAAAG CGCAACGCCT GCCCGGCTTC GCCGTTCCAA TCGACGCCGC | 480 |
| GCGGGTGCCG TGTGCTTCGA GTTTCGATGC GTAGTAACGG GCCACGTCAG CGAGCATGGT | 540 |

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CCCGCCGGCA CGGTTGCGCG AGCAAGGAAG CGTGAGACG ATAGATAATT TCACTGGCGA 720

CAGTACCTCA AATAGTCCGG AGCCTCGGCT CCGACGTTAA AGAGCAGATC CAGAATCGAC 780

ACGGCGGGCT CGAACCCTCC CCACAATTGC TTATAATCGC GGTAGCCGTC ATAATCGAAC 840

CAAGTTACCC GGATGCTAAG TTCGTGGAAC ACGCGCTCAT CGACATACGA ACGGGCTGAG 900

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CCGAGCATGA GGGTGCGCTC GGATTGGGAG CCGATCGCCC AGAGCCGCTC CCGGCTCGCG 3600
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CACCCACGGC CTCCTGCAAG AAACGACCCG CGAGGTCCGC TGGGTGCGCT CCACCCAAAT 5580
AGTTGCGGGC CATCGTACCC ATCCGCTGCG GGTGGCCGGG ATGATTGGCA CCGTCGCGGC 5640

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| CGTCGTAATT | GCGGGTAGCT | CACCGCTGTG | GAGCCGACAG | CTATTCGTCTG | AGGGGCGCTG | 5700 |
| GCTGTCCGTG | GGGCTACTCA | GCGTTGGGGT | GGCCGGGTTC | TGCGCGCAGG | CGACCCTGCT | 5760 |
| GGGCGCGCTG | GCCGGCGCTG | ACCGGTGGAC | ACAGTACGGG | TCACTGATGG | TGACCGACGC | 5820 |
| GGTCATCCGG | TTGGCGGTCTG | CCGCGGCAGC | GGTTGTGATC | GGATGGGGTC | TGGCCGGGTA | 5880 |
| CTTGTGGGCC | GCCACCGCGG | GAGCGGTGGC | GTGGCTGCTC | ATGCTGATGG | CCTCGCCCAC | 5940 |
| CGCGCGCAGC | GCGGCCAGCC | TGCTGACGCC | CGGGGGAATC | GCCACGTTCG | TGCGCGGTGC | 6000 |
| CGCTCATTCG | ATAACCGCCG | CGGGTGCCAG | CGCGATTCTG | GTAATGGGTT | TCCCAGTGTT | 6060 |
| GCTCAAAGTG | ACCTCCGACC | AGTTAGGGGC | AAAGGGCGGA | GCGGTCATCC | TGGCTGTGAC | 6120 |
| CTTGACGCGT | GCGCCGCTTC | TGGTCCCCT | GAGCGCGATG | CAAGGCAACC | TGATCGCGCA | 6180 |
| TTTCGTCTGAC | CGGCGCACCC | AACGGCTTCG | GGCGCTGATC | GCACCGGCGC | TGGTCGTCTGG | 6240 |
| CGGCATCGGT | GCGGTCTGGGA | TGTTGGCCGC | AGGGCTTACC | GGTCCCCTGGT | TGCTGCGTGT | 6300 |
| TGGATTCTGGC | CCCGACTACC | AAACTGGCGG | GGCGTTGCTG | GCCTGGTTGA | CGGCAGCGGC | 6360 |
| GGTAGCTATC | GCCATGCTGA | CGCTGACCGG | CGCCGCCGCG | GTCGCGGCCG | CACTGCACCG | 6420 |
| GGCGTATTTG | CTGGGCTGGG | TCAGCGCGAC | GGTGGCGTCG | ACGCTGTTGC | TGCTGCTGCC | 6480 |
| GATGCCGCTG | GAGACGCGCA | CCGTGATCGC | GCTGTTGTTC | GGTCCAACGG | TGGGAATCGC | 6540 |
| CATCCATGTG | GCCGCGTTGG | CGCGGCGACC | CGACTGATTT | GTGCCCCAGG | TCGACAAATC | 6600 |
| ACGCCGTCTC | GTCAGTGAGC | ACTCCGTCCT | CGGGTCCGAT | CCTTCAGGA | GACGTTGCAA | 6660 |
| CCTGATTTGG | CTCAAATTGG | TGCGCACCGA | GGGTCTGGGCA | CATCGTAGGG | TCGCAACAGT | 6720 |
| CACATGTGTC | ACTGCACCGG | GCGACACCCG | ATGTCCCGGC | TCTCAGCGAC | AGCTGTCTGA | 6780 |
| CCTGTGGTTT | TGTTCCCAAG | TTGGTCGTGG | CTGTGCGGGA | TTGGAGGTGG | CGTGGGGGTC | 6840 |
| GCGTCGTATG | GATTCTCTCT | CTCGGTTCCG | CGCGAAACGG | CCGCAGGCGC | AATGGTCACC | 6900 |
| AACTTGGCCG | CGGTGGAGTC | TAGCCTCACA | TTTTCTCTGGT | CGCCCCCGAC | AACCAGGAGG | 6960 |
| TCGCTGCAGA | ACGGGCGTTC | CCTACCCACA | TCTACTATGA | AGCGACAGCG | GCGCCCCGCT | 7020 |
| GTGATGGCTG | AGCATGACCG | ACAGAGGCGG | GAAGACAGTG | AAGCGAGCGC | TCATCACCGG | 7080 |
| AATCACCGGC | CAGGACGGCT | CGTATCTCGC | CGAACTGCTG | CTGGCCAAGG | GGTATGAGGT | 7140 |
| TCACGGGCTC | ATCCGGCGCG | CTTCGACGTT | CAACACCTCG | CGGATCGATC | ACCTCTACGT | 7200 |
| CGACCCGCAC | CAACCGGGCG | CGCGGCTGTT | TCTGCACTAT | GGTGACCTGA | TCGACGGAAC | 7260 |
| CCGTTTGGTG | ACCCTGCTGA | GCACCATCGA | ACCCGACGAG | GTGTACAACC | TGGCGGCGCA | 7320 |
| GTCACACGTG | CGGGTGAGCT | TCGACGAACC | CGTGACACACC | GGTGACACCA | CCGGCATGGG | 7380 |

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|-------------|-------------|-------------|------------|-------------|-------------|------|
| ATCCATGCGA | CTGCTGGAAG | CCGTTCCGGCT | CTCTCGGGTG | CACTGCCGCT | TCTATCAGGC | 7440 |
| GTCCCTCGTCG | GAGATGTTTCG | GCGCCTCGCC | GCCACCGCAG | AACGAGCTGA | CGCCGTTCTA | 7500 |
| CCCGCGGTCA | CCGTATGGCG | CCGCCAAGGT | CTATTCGTAC | TGGGCGACCC | GCAATTATCG | 7560 |
| CGAAGCGTAC | GGATTGTTTCG | CCGTTAACGG | CATCTTGTTT | AATCACGAAT | CACCGCGGCG | 7620 |
| CGGTGAGACG | TTCGTGACCC | GAAAGATCAC | CAGGGCCGTG | GCACGCATCA | AGGCCGGTAT | 7680 |
| CCAGTCCGAG | GTCTATATGG | GCAATCTGGA | TGCGGTCCGC | GA CTGGGGGT | ACGCGCCCGA | 7740 |
| ATACGTGCGA | GGCATGTGGC | GGATGCTGCA | GACCGACGAG | CCCGACGACT | TCGTTTTTGGC | 7800 |
| GACCGGGGCGC | GGTTTCACCG | TGCGTGAGTT | CGCGCGGGCC | GCGTTTCGAGC | ATGCCGGTTT | 7860 |
| GGACTGGCAG | CAGTACGTGA | AATTCGACCA | ACGCTATCTG | CGGCCCACCG | AGGTGGATTTC | 7920 |
| GCTGATCGGC | GACGCGACCA | AGGCTGCCGA | ATTGCTGGGC | TGGAGGGCTT | CGGTGCACAC | 7980 |
| TGACGAGTTG | GCTCGGATCA | TGGTCGACGC | GGACATGGCG | GCGCTGGAGT | GCGAAGGCAA | 8040 |
| GCCGTGGATC | GACAAGCCGA | TGATCGCCGG | CCGGACATGA | ACGCGCACAC | CTCGGTCGGC | 8100 |
| CCGCTTGACC | GCGCGGCCCCG | GGTCTACATC | GCCGGGCATC | GCGGCCTGGT | CGGGTCCGCG | 8160 |
| CTGCTACGCA | CGTTTGCGGG | CGCGGGGTTC | ACCAACCTGC | TGGTGCGGTC | ACGCGCCGAG | 8220 |
| CTTGATCTGA | CGGATCGGGC | CGCGACGTTC | GACTTCGTTC | TCGAGTCGAG | GCCGCAGGTC | 8280 |
| GTCATCGACG | CGGCGGCCCCG | GGTCGGCGGC | ATCCTGGCCA | ACGACACCTA | CCCGGCCGAT | 8340 |
| TTCCTGTCTGG | AAAACCTCCA | GATCCAGGTC | AACCTGCTGG | ATGCCGCCGT | GGCGGCGCGG | 8400 |
| GTGCCGCGGC | TGCTGTTTCT | GGGCTCGTCG | TGCATCTACC | CGAAACTCGC | CCCGCAGCCG | 8460 |
| ATCCCGGAGA | GCGCGCTGCT | CACCGGTCCG | TTGGAGCCGA | CCAACGACGC | GTACGCGATC | 8520 |
| GCCAAAATCG | CCGGCATCCT | TGCGGTCCAG | GCGGTGCGCC | GCCAACATGG | CCTGCCGTGG | 8580 |
| ATCTCGGCGA | TGCCCCACCA | CCTGTACGGG | CCAGGCGACA | ACTTTTCGCC | GTCCGGCTCG | 8640 |
| CATCTGCTGC | CGGCACTCAT | CCGCCGCTAT | GACGAGGCCA | AAGCCAGTGG | CGCGCCCAAC | 8700 |
| GTGACCAACT | GGGGCACCGG | CACGCCCCGA | CGGGAGTTGC | TGCACGTCGA | CGACCTGGCG | 8760 |
| AGCGCATGCC | TGTATCTGCT | GGAACATTTT | GACGGGCCGA | CCCATGTCAA | CGTGGGAACC | 8820 |
| GGCATCGACC | ACACCATCGG | CGAGATCGCC | GAGATGGTCG | CCTCGGCGGT | AGGCTATAGC | 8880 |
| GGCGAAACCC | GCTGGGATCC | AAGCAAACCG | GACGGAACAC | CACGCAAAC | GCTGGATGTT | 8940 |
| TCGGTGCTAC | GGGAGGCGGG | ATGGCGGCCT | TCGATCGCGC | TGCGCGACGG | CATCGAGGCG | 9000 |
| ACGGTGGCGT | GGTATCGCGA | GCACGCGGGA | ACGGTTCGGC | AATGAGGCTG | GCCCGTCGCG | 9060 |

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TTGATGGCCT GAAGTAGGTG CTCGCGTTGA ATCCAGAATG ACCGGCGATT GTCCCAGGAC 10800

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| CTACCGGGAA | GTCCCTCATG | TTCGGTGGGC | GCCGAGAGCA | TGAACTTCAC | CGGCGCCGGC | 10920 |
| CGCCGCAGCA | ACCGATCGGT | CAATTGTCGT | GCCGTCTGG | GCAACCGGAG | CCATTTATCG | 10980 |
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| TGTGCCATCA | CTTGTTAGC | CCCTTCGGCT | GGTCCTGGGT | TTGTCGACAT | GGTCAGGCTC | 11520 |
| GACAGCCGCG | TCGGAGCCGG | GAGGGCCACA | CATCCACGAG | CCCCCTGCGG | CTCGGCGTCG | 11580 |
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| GCAGCGCCAG | CATGGCGATC | CGGGGATGGC | GCGCGATGGT | TTCTTCGACG | GCGGCGCGCC | 11700 |
| CCTCCGGGCC | TGGAACGTTG | GCGATCTGGC | GAAGGATCCA | GTCGGCCATG | ACGGCGATGA | 11760 |
| GCTCCTCGCG | CGCGGGGTCT | CCCGGGAACA | GGTCGAGCAT | CGCGTCAAAC | GTCGCCGCAT | 11820 |
| GCCCCGGACC | CTGCGTCAAC | CAGAACTTTG | GCGGGTCCAC | CACCTGGTTG | TGCCACATGC | 11880 |
| CTTGGGCGTG | GCGGCGATAC | ACGGCCATGG | TGTCGGGCAA | CATGGCGATG | TCGCCATGCA | 11940 |
| CCGCGTGCCG | GACGTGCAGA | TACCAGTCCA | GGGGCATGAC | GTCGGCAGGA | ATGTCGTCTG | 12000 |
| AGCGCTCGAG | GCGACGGTAC | ACGGCCGAGT | TGGTCTGGAT | GAAGTTCATC | AAGATCAACG | 12060 |
| CATCCAGGCT | CAAGTTGCCC | CGCACCCGAA | CCGGGGGGAA | CTTCGAGTCC | TTGGCATGGC | 12120 |
| CGTCCTCCCA | TATCACTCGG | ACGGGATGGA | AGCACACCGT | CGTCTTGGGG | TGCCGGTCTGA | 12180 |
| GGAATGCGAC | CTGTTTGCTT | AGCTTCAGCG | GATCGATCCA | GTAGTCGTCC | GCCTCGCACA | 12240 |
| ACGCGACGTA | CTCGCCCGGA | GCGGCCGACA | GGGCGCCGGT | CAGGTTCCCA | TTGAGGCCGA | 12300 |
| GGTTTTTCGGT | CCTGAAGATC | GGCCGGAACA | CGTGCGGGTA | CCGCTCGGCG | TACTCACGGA | 12360 |
| TGATCGCCGG | GGTGGCATCG | GTCGACCGGT | CGTCGGCGAC | GATGATCTCC | ACCGGGAAGT | 12420 |
| CGGTTTGCTG | GTCGAGAAAG | CTGTCGAAGG | CCTGACGGGC | GTAGCCCGCC | TGGTTGTGAG | 12480 |

| | | | | | | |
|------------|------------|------------|------------|------------|------------|-------|
| TGGTCGAGAC | GATGCTCACC | TTGGGGCAAA | GCTGGGGACT | CACCGTCGGC | CCTTTTCCTG | 12540 |
| CGCGGCCGCA | AGGGTATTGC | GATGGCGAAC | GTGAATCGCC | TGTGCCCCGC | GGCCGTCGGC | 12600 |
| CGTCGTGGCC | TGGTGGTCGG | CGGACGTACG | GCACACGCTG | GCGAAGTATA | GCGAGGGTGC | 12660 |
| ACTGACGTTG | GGCTCGAACC | GCGTGGCGCG | CGGTGTGGGC | GCACCGTCTC | GAGTCGGTGC | 12720 |
| TGGTTGGCTC | GC | | | | | 12732 |

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 289 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

| | | | | | | |
|------------|------------|------------|------------|------------|------------|-----|
| ATACTCAAGC | TTGCCGCAAT | CGAAACCAAC | CTGTTTGTGC | CGCAAGAAAT | TACGCCGTGG | 60 |
| CCCGGCGCCG | ATCAAGAAAC | GCCCCGGGCG | GCGGCGGTGT | CGTCGTATGG | CATGACGGGC | 120 |
| ACCAATGTGC | ACGCCATTGT | CGAGCAGGCA | CCGGTGCCAG | CCCCCGAATC | CGGTGCACCA | 180 |
| GGCGACACCC | CGGCCACACC | CGGTATCGAC | GGCGCGCTGC | TGTTCTCGCT | GTCGGCCAGC | 240 |
| TCGCAGGACG | CGCTGCGGCA | AACCGCCGCG | CGGCTGGCCG | ATTGGGTCT | | 289 |

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 278 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

| | | | | | | |
|------------|-------------|------------|------------|------------|------------|-----|
| TTGGCGGGTT | GGCCACACAC | CCGCCGGTGA | CGGCGACGAT | GCTGGGCTGG | TTGCGGCCCT | 60 |
| GCGCCACCGC | GGCTTG CATG | CTGGTTGGCT | GTCTTGGGAC | GATCCCGAAA | TAGTCCACGC | 120 |
| GGATCTGGTG | ATTTTGC GGG | CTACCCGCGA | TTACCCCGCG | CGGCTCGACG | AGTTTTTGGC | 180 |

[illegible]

CTGGACTACC CGCGTGGCCA ATCTGCTGAA CTCGCGGCCG GTGGTGGCCT GGAATGTCCA 240

CGCCGTTCAC CTACGTGACC TTGATGGGAT CCGGGGGT 278

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1280 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

| | | | | | | |
|------------|------------|------------|-------------|-------------|-------------|------|
| CCGACCCAGA | CACTGACCGG | GCGACCGCTG | ATCGGCAACG | GCACCCCGG | GGCGGTCGGC | 60 |
| AGCGGGGCCA | CCGGGGCCCC | CGGTGGGTGG | CTGCTCGGCG | ACGGCGGGGC | CGGCGGGTCC | 120 |
| GGCGCGGCGG | GCTCGGGCGC | GCCCGGCGGG | GCGGGCGGGG | CTGCCGGGCT | GTGGGGTACC | 180 |
| GGCGGGGCCG | GCGGGATCGG | CGGAGCCAGC | ACCGTACTCG | GCGGCACCGG | CGGGGGAGGC | 240 |
| GGGGTCGGTG | GGCTGTGGGG | CGCCGGTGGG | GCCGGCGGGG | CCGGTGGAAC | CGGCCTTGTT | 300 |
| GGTGGCGACG | GCGGGGCCGG | TGGGGCCGGC | GGGACCGGCG | GA CTGCTGGC | CGGGCTGATC | 360 |
| GGTGCCGGCG | GAGGTCACGG | CGGGACCGGC | GGGCTCAGCA | CTAATGGCGA | CGGCGGGGTT | 420 |
| GGCGGGGCCG | GCGGGAATGC | CGGAATGCTC | GCCGGGCCGG | GCGGCGCCGG | CGGAGCCGGC | 480 |
| GGTGACGGCG | AAAACCTGGA | CACCGGTGGG | GACGGCGGGG | CCGGCGGTAG | CGCAGGGCTG | 540 |
| CTGTTCGGCA | GCGGCGGCGC | CGGCGGCGCC | GGCGGATTTG | GTTTCCTCGG | TGGGGACGGC | 600 |
| GGGGCCGGTG | GCAACGCCGG | GCTGCTGTTG | TCCAGCGGCG | GGGCCGGCGG | GTTCCGGCGGG | 660 |
| TTCGGCACCG | CCGGTGGGGT | CGGTGGGGCC | GGCGGCAATG | CCGGCTGGCT | GGGCTTCGGC | 720 |
| GGGGCCGGGG | GCATCGGCGG | AATCGGCGGT | AACGCTAACG | GGGGCGCCGG | TGGGAACGGC | 780 |
| GGCACCGGCG | GTCAGTTATG | GGGTAGCGGC | GGCGC CGGCG | TCGAAGGCGG | CGCAGCCTTA | 840 |
| AGCGTCGGCG | ACACCGGCGG | GGCCGGTGGC | GTCGGCGGCA | GCGCCGGGCT | GATCGGCACC | 900 |
| GGCGGCAACG | GCGGCAACGG | CGGCACCGGC | GCCAACGCCG | GCAGCCCGCG | AACCGGCGGC | 960 |
| GCCGGCGGGT | TGCTGCTGGG | CCAAAACGGG | CTCAACGGGT | TGCCGTAGCC | GGGCGGCACG | 1020 |
| GCATGGCTTC | CGGGCGTCAA | CCACTCGCCG | GTGATGCAGA | TCGGCTGCGG | AGCGGGCCGC | 1080 |

[illegible]

(2) INFORMATION FOR SEQ ID NO: 5:

(D) TOPOLOGY: linear

(iv) ANTI-SENSE: NO

| | | | | | | |
|-------------|------------|------------|------------|------------|------------|-----|
| GGGCATCGGC | GGAATCGGCG | GTAACGCTAA | CGGGGGCGCC | GGTGGGAACG | GCGGCACCGG | 60 |
| CGGTCAAGTTA | TGGGGTAGCG | GCGGCGCCGG | CGTCGAAGGC | GGCGCAGCCT | TAAGCGTCGG | 120 |
| CGACACC | | | | | | 127 |

[illegible]